Claims:

1.   A method to test a communication system (200) comprising a plurality of emitters (205), receivers (210) and channels (220), with a set of data, each data comprising at least one
5   emitter and one receiver identifiers, said method comprising the steps of :

   - for each data of said set of data :

      - assigning a connection identifier value to said data according to the emitter and receiver identifiers of said
10   data (445) ;

      - computing CRC bits on said data (420) ;

      - associating said computed CRC bits and said connection identifier value with said data (410) ;

   - transmitting said data, said computed CRC bits and said
15   connection identifier value to said communication system ;

   - processing said transmitted data, computed CRC bits and connection identifier value in said communication system to pass on said data, said computed CRC bits and said connection identifier value to corresponding receiver ;

20   - extracting data (455), CRC bits (465) and connection identifier value (460) ;

   - computing CRC bits on said extracted data (470) ; and,

   - comparing said extracted CRC bits and said CRC bits computed on said extracted data (475),

25   wherein a transmission error is detected if said extracted CRC bits and said CRC bits computed on said extracted data are different.

2. The method of claim 1 wherein said step of associating said computed CRC bits and said connection identifier value to said data includes formatting a frame comprising said computed CRC bits, said connection identifier value and said data.

5 **3.** The method of claim 1 wherein,

- said steps of computing CRC bits and associating said CRC bits and said connection identifier value to said data includes comparing the length of said data with a maximum frame length threshold and,

10   - if the length of said data is greater than said maximum frame length threshold:

        - dividing said data into blocks, computing CRC bits on the first block, and selecting the second block;

        - merging said selected block and said computed CRC
15 bits in a new block and computing CRC bits on said new block;

        - checking if CRC bits have been computed for each of said blocks:

        - if CRC bits have not been computed for each of said
20 blocks, formatting a frame for said selected block, comprising said selected block, said associated connection identifier value and a flag set to a second value, selecting next block on which CRC bits have not been computed and repeating the last two steps,

25   - else if CRC bits have been computed for each of said blocks, formatting a frame for said selected block, comprising said selected block, said associated CRC bits, said associated connection identifier value and a flag set to a first value;

- else if the length of said data is equal or less than said maximum frame length threshold, computing CRC bits on said data and formatting a frame comprising said data, said computed CRC bits, said associated connection identifier value and a flag set to a first value;

- said step of extracting data, CRC bits and connection identifier value consists in extracting said flag and,

- if the value of said flag is equal to said first value, extracting said data, said CRC bits and said connection identifier value;

- else if the value of said first flag is equal to said second value, extracting said block and said connection identifier value;

- said step of computing said CRC bits on said extracted data consists in:

- if the value of said flag is equal to said second value:

- if the value of the flag of the previous received frame having the same connection identifier value is equal to said first value, computing temporary CRC bits on said extracted data;

- else if the value of the flag of the previous received frame having the same connection identifier value is equal to said second value value, merging said computed temporary CRC bits with said extracted data and computing temporary CRC bits;

- else if the value of said flag is equal to said first value:

- if the value of the flag of the previous received frame having the same connection identifier value is equal

to said second value, merging said computed temporary CRC bits with said extracted data and computing CRC bits;

- else if the value of the flag of the previous received frame having the same connection identifier value is equal to said first value value, computing CRC bits on said extracted data.

4.   The method of claim 3 wherein the order value of the block is encoded in the frame if the value of the flag associated to said frame is equal to said second value.

5.   The method of claim 4 further comprising the step of verifying the arrival order of the frames having a common connection identifier value if the value of the flag associated to said frames is equal to said second value.

6.   The method of claim 1 wherein said step of computing CRC bits on said data comprises the steps of :

- processing said data according to the process applied by said communication system on said transmitted data ; and,

- computing CRC bits on said processed data.

7.   The method of claim 1 wherein the steps of assigning a connection identifier value, computing CRC bits and assigning said computed CRC bits and said connection identifier value to said data, for each data of said set of data, are executed before testing said communication system.

8.   The method of claim 1 further comprising the steps of stopping the test of said communication system and forewarning the user when a transmission error is detected.

9.   An apparatus comprising means adapted for carrying out the method according to any one of the previous claims.

10. A computer-like readable medium comprising instructions for carrying out the method according to any one of the claims
5 1 to 8.

11. A method to test a commmunication system comprising the acts of:

   for each data of said set of data:

10   assigning a connection identifier value to said data according to the emitter and receiver identifiers of said data (445);

   computing CRC bits on said data (420);

   associating said computed CRC bits and said connection
15   identifier value with said data (410);

   transmitting said data, said computed CRC bits and said connection identifier value to said communication system;

   extracting data (455), CRC bits (465) and connection identifier value (460);

20   computing CRC bits on said extracted data (470); and

   comparing said extracted CRC bits and said CRC bits computed on said extracted data (475),

   wherein a transmission error is detected if said extracted CRC bits and said CRC bits computed on said extracted data
25   are different.